

REMARKS

The amendments to the specification and claims find support in the specification and claims as filed. The amendment to Claim 21 finds support in the specification, for example, at page 9, lines 16-31, particularly at page 9, lines 17-21, and elsewhere in the specification. The amendment to Claim 26 finds support in the specification, for example, at page 9, lines 20-21. No new matter is added by way of the amendments.

Claims 21-28 and new Claim 39 are pending in the application.

Claims 21-28 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by Dan Bensky et al., Hson-Mou Chang et al., Chu et al., CN 1047806 or EP 441278. Claims 21-28 also stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Dan Bensky et al., Hson-Mou Chang et al., Chu et al., CN 1047806 or EP 441278. Applicants respectfully traverse the rejections.

The Rejections of Claims 21-28 Under 35 U.S.C. §102(b)

Claims 21-28 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by Dan Bensky et al., Hson-Mou Chang et al., Chu et al., CN 1047806 or EP 441278. Applicants traverse the rejections of Claims 21-28 as allegedly anticipated by the cited references.

Anticipation under 35 U.S.C. §102 requires that “every element of the claimed invention be identically shown in a single reference.” (*In re Bond*, 910 F.2d 831,832 (Fed. Cir. 1990). However, Applicants note that none of the cited references discuss arabinogalactan protein compositions; moreover, none of the cited references discusses arabinogalactan protein compositions with a weight average molecular weight of at least 100 kiloDaltons, comprising about 5% protein, of which protein about 20% comprises hydroxyproline, and having, for example, a sugar composition containing an arabinose:galactose ratio of at least 2:1, comprising 45-75 mole % Ara, 2-4 mole% Rha, 8-25 mole % Gal, 4-6 mole % GaIA, and 5-20 mole % Glc as required by the present invention. Thus the claimed invention is not discussed in the cited references.

Moreover, the claimed invention is not inherent in the cited references. Applicants respectfully note that different extraction methods and procedures result in different extracts, even if the same source is used as a starting material. For example,

an extraction technique that includes an ultrafiltration step will result in two extracts, one (the filtrate) having an average molecular weight below the cut-off, and one (the retentate) having an average molecular weight above the cut-off (see, for example, the present application at page 27).

That different extraction methods and procedures result in different extracts is also taught by the cited references. As taught by one of the cited references (Chu et al., at page 126 column 1) multiple fractions may be provided by fractionation and purification (which may include "extraction, ultracentrifugation, gel chromatography, etc." Chu et al., page 126, lines 1-2). A particular fraction may be chosen: e.g., the "fraction with a molecular weight between 20,00 and 25,000" as chosen by Chu et al. Bombardelli et al., (EP0441278, column 1, lines 49-54 to column 2, lines 1-6) teach that at least three different astroglucanes with properties differing from other compounds from *Astragalus* may be purified from *Astragalus membranaceous* by different extraction and purification protocols. Applicants note again, however, that the cited references do not discuss arabinogalactan protein compositions.

Thus, it is known that different fractions and different compositions may be produced from a source by different fractionation and purification procedures. The extraction and purification procedures disclosed in the present application are not discussed in the cited references, nor are the compositions resulting from them discussed or inherent in the cited references. Thus, for at least the reasons that different compositions may be produced from a single source, and that different fractions may have different properties, applicants respectfully submit that the claimed compositions are not "inherent" in the materials discussed in the references.

There being many claim elements that do not appear in the cited references, and since these claim elements are not inherent in the cited references, the references fail to anticipate the claimed invention. Accordingly, Applicants submit that Claims 21-28 are not anticipated by the cited references, and that the rejections of Claims 21-28 under 35 U.S.C. §102(b) are overcome.

The Rejections of Claims 21-28 Under 35 U.S.C. §103(a)

Claims 21-28 also stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Dan Bensky et al., Hson-Mou Chang et al., Chu et al., CN 1047806 or EP 441278. The Examiner suggests that “the claims are obvious since the extract is purified by known techniques.” However, the particular techniques disclosed in the present application (and which are needed to produce the claimed arabinogalactan protein compositions of the present invention) are not described or suggested by any cited reference or by any combination of the cited references. Applicants traverse the rejections of Claims 21-28 as allegedly obvious over the cited references.

In order to establish a *prima facie* case of obviousness, there must be 1) some suggestion or motivation in the art or in the knowledge generally available to one of ordinary skill in the art, to modify or to combine the reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on the applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As discussed above, the cited references all lack many elements of the claimed invention. Thus, for example, the cited references fail to disclose arabinogalactan protein compositions, fail to disclose arabinogalactan protein compositions comprising about 5% protein, and fail to disclose arabinogalactan proteins having an amino acid content of about 20% hydroxyproline, and fail to disclose arabinogalactan protein compositions having a sugar composition containing an arabinose:galactose ratio of at least 2:1, comprising 45-75 mole % Ara, 2-4 mole% Rha, 8-25 mole % Gal, 4-6 mole % GalA, and 5-20 mole % Glc.

Moreover, there is no suggestion in the cited references that the references could be combined to provide the missing elements, nor do the cited references provide any motivation to supply the missing elements by combination of references or by any other means. None of the cited references discuss arabinogalactan protein compositions, nor the fraction of an arabinogalactan protein composition that is protein, nor the presence or amount of hydroxyproline in such an arabinogalactan protein, nor that an

arabinogalactan protein composition could or should have a sugar composition containing an arabinose:galactose ratio of at least 2:1, comprising 45-75 mole % Ara, 2-4 mole% Rha, 8-25 mole % Gal, 4-6 mole % GalA, and 5-20 mole % Glc. Lacking disclosure of the claimed arabinogalactan protein compositions, there is no suggestion or motivation in the cited references to provide such compositions.

The cited references also lack any suggestion that would provide one of ordinary skill in the art that such compositions would have a reasonable expectation of success were such a combination to be attempted.

Accordingly, the cited references failing to provide all the elements of the claimed invention; failing to provide a suggestion, or any motivation to combine references to provide the claimed invention, and failing to provide a reasonable expectation of success, applicants respectfully submit that the rejections of Claims 21-28 under 35 U.S.C. §103(a) are overcome.

CONCLUSION

Applicants respectfully submit that the rejections of Claims 21-38 are overcome, that all claims are in condition for allowance, and request reconsideration and allowance of all pending claims. The Examiner is invited to contact the undersigned attorney at the telephone number indicated below should he find that there are any further issues outstanding.

Please charge any additional fees, including fees for a two month extension of time, and any fees for additional extension of time, or credit overpayment to Deposit Account No. 08-1641 citing Attorney's Docket No. 22001-0003.

Respectfully submitted,

Date: July 28, 2004
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